L 16923-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM/WE

ACCESSION NR: AP5002734 S/0065/64/000/007/0024/0028

AUTHOR: Mel'nikova, N. P.; Fedorov, A. P.; Kuleshova, A. N.

TITLE: Conversion of individual hydrocarbons in catalytic reforming

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 7, 1964, 24-28

TOPIC TAGS: catalysis, hydrocarbon, dehydrogenation

ABSTRACT: The dependence of the conversion of naphthenic and other hydrocarbons on the temperature of the process, feed space velocity of the raw stock, and duration of operation of the catalyst was investigated in the process of catalytic reforming on an experimental semi-industrial reforming setup. The dehydrogenation of cyclohexane to benzene, the conversion of methylcyclohexane to benzene, and the dehydrogenation of methylcyclohexane to toluene, as well as the conversion of normal paraffin hydrocarbons to isoparaffin hydrocarbons, were studied. It was found that during catalytic reforming of the 60-105°C fraction, a substantial amount of paraffin hydrocarbons of the iso-structure is formed, as a result of which the ratio of

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ACCESSION NR: AP5002734

iso- to normal paraffin hydrocarbons in narrow fractions of the catalyzates increases (in comparison with the initial fraction of the raw material). It was established that after 8000 hours of operation over an aluminum-platinum catalyst, its dehydrogenating ability with respect to six-membered naphthenic hydrocarbons decreased negligibly (by 3-4% rel.), while its ability to convert methylcyclopentane decreased sharply. The isomerizing ability of the catalyst also decreased substantially with increasing time of operation. Orig. art. has 4 tables.

ASSOCIATION: KF VNII neft' (KF VNII petroleum)

SUBMITTED: 00 ENCL: 00 SUB CODE: GC, OC

NO REF SOV: 000 OTHER: 000 JPRS

Card 2/2

MEL'NIKOVA, N.P.; FEDOROV, A.P.; GARANIN, I.L.; PODOL'SKIY, M.A.; KULESHOVA, A.N.

Some regularities of the catalytic reforming process. Khim. i tekh. topl. i masel 9 no.3:7-11 Mr'64 (MIRA 17:7)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-issledovatel'skogo instituta.

MEL'NIKOVA, M.F.; [illegible]

[illegible]
i tekh. tepl. [illegible]

1. Krasnodarskiy filial [illegible] -issledovatel'skogo instituta.

FEDOROV, A.P.; MEL'NIKOVA, N.P.

Calculation of the heat effect of catalytic reforming. Khim.i tekh.topl. i masel 10 no.1:27-29 Ja '65.
(MIRA 18:4)

1. Krasnodarskiy filial Vsesoyuznogo neftegazovogo nauchno-issledovatel'skogo instituta.

DAYNYAK, L.B., kand.med.nauk; MEL'NIKOVA, N.S., inzh.

New method for determining the patency of the nasal passages.
Vest.otorin. 22 no.2:90-93 Mr-Ap '60. (MIRA 13:12)

1. Iz kliniki bolezney ukha, gorla i nosa (zav. - prof.B.S. Preobrazhenskiy) lechebnogo fakul'teta II Moskovskogo meditsinskogo instituta i laboratorii gazovykh meditsinskikh priborov i apparatov (rukovoditel' - kand.tekhn.nauk A.S.Perel'mutr) Vsesoyuznogo nauchno-issledovatel'skogo instituta meditsinskogo instrumentariya i oborudovaniya.
(NOSE)
(OTORHINOLARYNGOLOGY equip. & supplies)

ACCESSION NR: AP4044738 S/0207/64/000/004/0155/0160

AUTHORS: Mol'nikova, N. S. (Moscow); Salamakhin, T. M. (Moscow)

TITLE: On the solution of point explosion in different gases

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 4, 1964, 155-160

TOPIC TAGS: adiabatic expansion, detonation wave front, shock wave, nonsteady flow, self similar flow

ABSTRACT: An approximate method for the solution of nonsimilar explosion of gases from a point charge in planar, cylindrical, and spherical symmetry ($\nu = 1,2,3$) was considered for various values of the adiabatic index γ ((1.2 to 7). The analysis is based on the hypothesis that at any given time t the density distribution in coordinate space can be expressed as a power law. The equations of motion for an inviscid non-heat conducting gas are written with three boundary conditions on the shock front: $v(r_s, t) = u_s$, $\rho(r_s, t) = \rho_s$, $p(r_s, t) = p_s$

$$u_s = \frac{2c}{\gamma+1}\left[1 - \frac{a_1^2}{c^2}\right], \qquad \rho_s = \frac{\gamma+1}{\gamma-1}\rho_1\left[1 + \frac{2}{\gamma-1}\frac{a_1^2}{c^2}\right]^{-1}$$

$$p_s = \frac{2\rho_1 c^2}{\gamma+1}\left[1 - \frac{\gamma-1}{2\gamma}\frac{a_1^2}{c^2}\right], \qquad c = \frac{dr_s}{dt}$$

where

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ACCESSION NR: AP4044738

and r_2 - radius of shock wave, a_1 - speed of sound in undisturbed gas. The density ρ is expressed by $\rho = \rho_2 (r / r_2)^{\alpha(t)}$ where $\alpha(t) = \nu (\rho_2 / \rho_1 - 1)$.

The solution of the resulting hydrodynamic equations leads to the following expressions across the shock

$$\frac{p}{p_2} = 1 + \frac{H_1 \rho_2 r_2}{p_2 (\alpha + 2)} \left[1 - \left(\frac{r}{r_2}\right)^{\alpha+2}\right] - \frac{\rho_2 r_2}{p_2 (\alpha + 2)} \left(\frac{r}{r_2}\right)^{\alpha+2} \left(H_1^{\circ} + H_1 \ln \frac{r}{r_2}\right) \ln \frac{r}{r_2}$$

$$\frac{v}{v_2} = \left[1 - H_1 \ln \frac{r}{r_2}\right] \frac{r}{r_2}, \qquad \frac{\rho}{\rho_2} = \left(\frac{r}{r_2}\right)^{\alpha(t)}$$

$$\left(H_1 = \frac{r_2}{\rho_2 v_2} \frac{d\rho_2}{dt}, \ \alpha(t) = \nu \left(\frac{\rho_2}{\rho_1} - 1\right)\right)$$

Consequently, if $r_2(t)$ is known from experimental measurements, the above formula gives a complete solution of the charge explosion problem. If r_2 is not known a priori, the above equation must be solved simultaneously with an integral energy conservation equation. This leads to a complicated expression for $R(q)$ ($q = a_1/c$, $R = r/r_0$) which must be solved numerically. Otherwise, an approximate expression can be derived of the form $q = C_0 R^{\nu/2} \left[\cos \frac{\pi q}{2}\right]^n \quad \left(n = \frac{\nu + 1}{\nu + 2}\right)$.

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ACCESSION NR: AP4044738

Some of the numerical results thus obtained are given graphically for $\gamma = 1.2$, 1.4, 1.67, 2, 2.17, 3, 4, and 7. For $\gamma = 1.4$ the approximate solution is correct to within 8%. Orig. art. has: 40 equations and 3 figures.

ASSOCIATION: none

SUBMITTED: 24Feb64 ENCL: 00

SUB CODE: ME,TD NO REF SOV: 010 OTHER: 003

Card 3/3

MEL'NIKOVA, N. S.

6

Dyes with antipyrine nuclei. IV. Acid-base properties of the dyes. O. F. Ginzburg, D. V. Ioffe, and N. S. Mel'nikova (Lensovet Technol. Inst., Leningrad). *Zhur. Obshchei Khim.* 25, 358–62; *J. Gen. Chem. U.S.S.R.* 25, 330–41(1955)(Engl. translation); cf. *C.A.* 42, 6356d; 48, 13685g.—The following hydrolysis equil. consts. for antipyrine dyes R_2CHAr(R = antipyryl) (I) (Ar shown) were calcd. from the optical densities at 17° of their solns. in Me_2CO in buffers at various pH levels: *p-*$Me_2NC_6H_4$, 1.38×10^{-11}; *3,4-*$(MeO)_2C_6H_3$, 1.24×10^{-9}; *1-*$C_{10}H_7$, 2.1×10^{-9}; *m-*$MeOC_6H_4$, 1.78×10^{-7}; *Ph*, 2.5×10^{-7}; *m-*$O_2NC_6H_4$, 9.7×10^{-6}; *p-*$O_2NC_6H_4$, 1.77×10^{-5}. Letting 15 g. antipyrine and 6.45 g. *m*-$MeOC_6H_4CHO$ stand overnight in EtOH contg. 30 ml. concd. HCl gave 88% *diantipyryl(m-methoxyphenyl)methane*, m. 186°; *di-HCl salt*, decomp. 141–2°; *picrate*, m. 195°. Similarly was obtained 95% *diantipyryl(3,4-dimethoxyphenyl)methane*, m. 200° (*di-HCl salt*, decomp. 176–7°; monopicrate, m. 160°). Oxidation of diantipyryl(*m*-nitrophenyl)methane with $NaNO_2$–HNO_3 finally at reflux 5–6 min. gave *diantipyryl(m-nitrophenyl)carbinol* (*picrate*, m. 148–51°, absorption max. 490 mμ, pK_a 7.42–7.43). Similarly were prepd. the following *diantipyrylarylcarbinols* (*aryl* shown): *m-*$MeOC_6H_4$ (*picrate*, m. 111–13°, max. 490 mμ, pK_a 9.16); *3,4-*$(MeO)_2C_6H_3$ (*picrate*, m. 118–20°, max. 500 mμ, pK_a 6.26); *p-*$Me_2NC_6H_4$, m. 135–6°, max. 550 mμ, pK_a 3.30; *1-*$C_{10}H_7$ (*picrate*, m. 235–6°, max. 470 mμ, pK_a 6.51); *Ph*, m. 172–3°, max. 480 mμ, pK_a 7.56–7.67; *p-*$O_2NC_6H_4$, m. 180–1°, max. 500 mμ, pK_a 9.44–9.47.

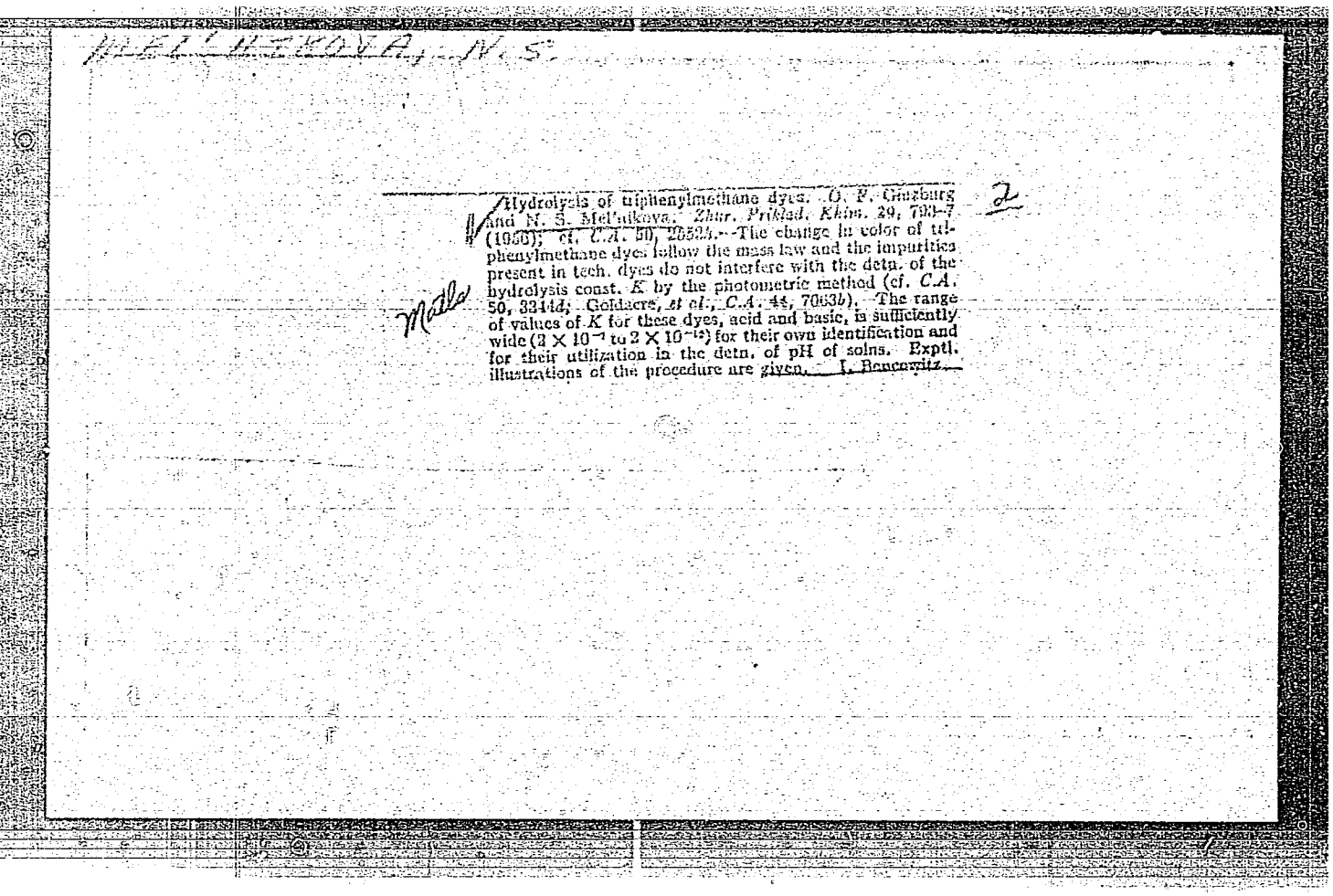
G. M. Kosolapoff

(2)

GINZBURG, O.F.; MEL'NIKOVA, N.S.

On aminotriaryl carbinols. Zhur.ob.khim.25 no.6:1156-1160 Je '55.
(MLRA8:12)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta
(Methanol)



Hydrolysis of triphenylmethane dyes. O. F. Ginzburg and N. S. Mel'nikova. *Zhur. Prikład. Khim.* 29, 793–7 (1956); cf. *C.A.* 50, 2552h.—The change in color of triphenylmethane dyes follow the mass law and the impurities present in tech. dyes do not interfere with the detn. of the hydrolysis const. K by the photometric method (cf. *C.A.* 50, 3344d; Goldacre, *et al.*, *C.A.* 44, 7063b). The range of values of K for these dyes, acid and basic, is sufficiently wide (2×10^{-7} to 2×10^{-12}) for their own identification and for their utilization in the detn. of pH of solns. Exptl. illustrations of the procedure are given. I. Bencowitz

MEL'NIKOVA, N.S.

Hydrolysis of triphenylmethane dyes. O. F. Ginzburg and N. S. Mel'nikova. *J. Appl. Chem. U.S.S.R.* 29, 850–62(1956)(English translation).—See *C.A.* 50, 16111d.
B. M. R.

SEDOV, Leonid Ivanovich; MEL'NIKOVA, N.S., red.

[Methods of similitude and dimensionality in mechanics] Metody podobiia i razmernosti v mekhanike. Izd.5. Moskva, Nauka, 1965. 386 p. (MIRA 18:3)

MEL'NIKOVA, N.S.

20-2-7/50

AUTHOR: KOROBEYNIKOV, V.P., MEL'NIKOVA, N.S.

TITLE: On the Rigorous Solutions of the Linearized Problem Concerning Point Explosion With Back Pressure (O tochnykh resheniyakh linearizirovannoy zadachi o tochechnom vzryve s protivodavleniyem).

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol.116, Nr 2, pp.189-192(USSR)

ABSTRACT: A point explosion is assumed to take place in an ideal gas with constant initial pressure p_1 and with a density ϱ_1 variable according to the law $\varrho_1 = \frac{A}{r^\omega}$. In the nondimensional variables

$$\frac{v}{c} = f(\lambda,q), \quad \frac{\varrho}{\varrho_2} = g(\lambda,q), \quad \frac{p}{p_2} = h(\lambda,q), \quad \lambda = \frac{r}{r_2}, \quad q = \frac{\gamma p_1}{\varrho_1 c^2}$$

where v denotes the velocity, ϱ the density, p the pressure c the velocity of the shock wave, r_2 its radius, ϱ_2 and p_2 the density and pressure directly behind the front of the shock wave, the equations for the one-dimensional instationary gas motion are set up for spherical symmetry. The system of equations is analogous to that one of Akira Sakurai [4]. Now the system is linearized whereby it is put

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On the Rigorous Solutions of the Linearized Problem Concerning Point Explosion With Back Pressure

$$f(\lambda,q) = f_0(\lambda) + qf_1(\lambda); \quad \cdots \frac{r_2}{q}\frac{dq}{dr_2} = 3(1+a_1 q)$$

where q cannot be neglected because of the consideration of the counterpressure, and for the determination of f_1, g_1, h_1 and a_1 one obtains a system of 3 linear differential equations with the following general solution:

$$f_1 = \frac{1-\gamma}{\gamma+1}\left(\alpha_1\lambda + c_2\lambda^{r_2+1} + c_3\lambda^{r_3+1}\right), \quad g_1 = \alpha_2\lambda + c_1\lambda^{r_1+1} -$$

$$- \frac{(r_2+4)(1-\gamma)}{(r_2+3)(1-\gamma)+6\gamma} c_2\lambda^{r_2+1} + k_1 c_3\lambda^{r_3+1}, \quad h_1 = \alpha_3\lambda^3 +$$

$$+ \frac{5\gamma+1}{(2r_1+6)(\gamma-1)} c_1\lambda^{r_1+3} - \frac{(\gamma r_2+3+3\gamma)(1-\gamma)}{(r_2+3)(1-\gamma)+6\gamma} c_2\lambda^{r_2+3} + k_2 c_3\lambda^{r_3+3}$$

Here c_1, c_2, c_3 are arbitrary constants, k_1 and k_2 are known constants, $\alpha_1, \alpha_2, \alpha_3$ are known expressions in γ and a_1, e.g.

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$\alpha_2 = \frac{4}{3}\,\frac{\gamma-1}{\gamma+1}\,\alpha_1 + \frac{2}{\gamma-1}$ and $r_1 = \frac{3(\gamma+1)}{\gamma-1}$ etc. The application of the boundary conditions allows to obtain a very complicated algebraic system for the determination of the constants. The values of these constants for γ = 1,2; 1,4; 5/3; 3,0; 7,0 are presented in a table. Two diagrams show the course of $f_1(\lambda)$ and $g_1(\lambda)$.

ASSOCIATION: Mathematical Institute im. V.A. Steklov Academy of Sciences USSR (Matematicheskiy institut im. V.A. Steklova AN SSSR)

SUBMITTED: March 28, 1957

AVAILABLE: Library of Congress

CARD 3/3

AUTHOR: Kochina, N.N. and N. V. Mel'nikova (Moscow) 40-22-1-1/15

TITLE: On Strong Point Explosions in a Compressible Medium (O sil'nom tochechnom vzryve v szhimayemoy srede)

PERIODICAL: Prikladnaya Matematika i Mekhanika, 1958, Vol 22,Nr 1, pp 3 - 15 (USSR)

ABSTRACT: The problem of strong point explosions in an ideal gas was solved by Sedov [Ref 1,2,3] . He found the solution for plane, cylindrical and spherical waves. Also the set up for the solution of the point explosion problem in more general media is due to Sedov. In particular he considered explosions in incompressible fluids. The two solutions given by Sedov can be applied to find the solution of similar tasks for more general problems. In particular for point explosions in water. The authors investigate similar solutions of point explosion shocks for three concrete new forms of equations of the state media which are assumed to be ideal.
The case of spherical symmetry is mainly considered. Since general equations of state do not exist for water, an equation

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is set up in the form

$$(4.1) \qquad p = \Psi(S)(\rho^{\varkappa} - \rho_0^{\varkappa})$$

Here $\Psi(S)$ is a certain function of the entropy S and has about the value 7. The results obtained by this equation of state are discussed for different cases and plotted in diagrams. There are 8 figures and 7 references, 4 of which are Soviet, and 3 American.

SUBMITTED: October 22, 1957

Card 2/2

1o(1)

AUTHORS: Kochina, N.N. and Mel'nikova, N.S. (Moscow) SOV/40-22-4-3/26

TITLE: On the Nonsteady Motion of a Gas Which is Ejected by a Piston Without Considering the Back Pressure (O neustanovivshemsya dvizhenii gaza, vytesnyayemogo porshnem, bez ucheta protivodavleniya)

PERIODICAL: Prikladnaya matematika i mekhanika, 1958, Vol 22, Nr 4, pp 444-451 (USSR)

ABSTRACT: The authors investigate the nonsteady motion of a compressible gas which is pushed out of a cylinder by a moving piston. The back pressure of the gas is neglected and it is assumed that the piston moves according to a law $v = ct^m$. A problem of this kind was solved for the first time by Sedov for the case $m = 0$. For three other special values of the parameter m solutions have been given by other authors. In the present paper a qualitative image of the solutions of the equations of motion is given for a large range of the number m. Therewith it appeared that according to the value of the adiabatic exponent and according to the geometric problem the qualitative image of the flow may be very

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different. By forming a non-dimensional characteristic magnitude it is shown that similar solutions of the problem can be found. Furthermore it is shown that the obtained undimensional solutions can be also extended to symmetrical plane or spherical motions. Thus it is possible e.g. to calculate the motions of gases during strong explosions in the space. In this case the products of combustion of the explosion medium act the part of the cylinder.
Compared with the paper of Sedov the present paper principally contains no news. But it is distinguished by a careful discussion of numerous special cases.
There are 8 figures, and 9 references, 7 of which are Soviet, and 2 English.

SUBMITTED: April 1, 1958

SOV/20-122-2-

10(7)

AUTHORS: Kochina, N. N., Mel'nikova, N. S.

TITLE: On the Non-Steady Motion of a Gas Forced out by a Piston with Allowance for Counterpressure (O neustanovivshemsya dvizhenii gaza, vytesnyayemogo porshnem, s uchetom protivodavleniya)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 2, pp 1.2-1.5 (USSR)

ABSTRACT: This paper investigates the problem of the point explosion in a medium at rest with allowance for the forcing out of the air by the products of the explosion. The authors assume that the motion of the gaseous masses is modelled by the expansion of a piston according to a given law. The initial pressure p_1 is assumed to be different from zero, and the gaseous masses are assumed to move like a piston according to the law

$$v_* = ct^m \left\{ 1 + \frac{(m-1)}{2(2m-1)} \left(\frac{\gamma p_1 \lambda_*}{\rho_1 c} \right)^2 At^{-2m} \right\}.$$

c and m denote constants, ρ_1 - the initial density, λ_* - the

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On the Non-Steady Motion of a Gas Forced out by a Piston with Allowance for Counterpressure

dimensionless radius of the piston ($\lambda_* = r_*/r_2$), A - a dimensionless constant. The authors first introduce a system of dimensionless variables (f, R, P, λ, q, s). The solution of the moving piston may be reduced to the finding of the functions $f(\lambda,q)$, $R(\lambda,q)$, and $P(\lambda,q)$ in a certain region of the plane $\lambda,q\ (0 \leqslant q \leqslant 1)$. These functions satisfy the differential equations of the one-dimensional non-steady motion of a gas, and also boundary and initial conditions which are given in this paper. The linearized problem is then investigated, i.e. the terms of the order of magnitude q^2 and higher in the equations and boundary conditions are neglected. The corresponding system of the linear differential equations is given explicitly. The problem is reduced to the solution of the above-mentioned linearized system of differential equations in the interval $\lambda_* < \lambda < 1$ in consideration of the corresponding boundary conditions. The calculations are discussed step by step. The linear differential equations of the first order are solved by numerical integration for the special cases $m = -0,4$ and $m = -0,5$ ($\nu = 3$, $\gamma = 1,4$). In the

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On the Non-Steady Motion of a Gas Forced out by a Piston with Allowance for the Counterpressure

neighborhood of the piston, the asymptotic formulae have been used for the calculations. 3 diagrams demonstrate the distributions of the velocity, density, and pressure in the air behind the shock wave. In an other paper, the authors solved an analogous problem for the case $v_x = ct^m$ and also the problem of the non-steady motions of water which are caused by an expansion (of constant velocity) of a piston. The author thanks L. I. Sedov for useful advice. There are 3 figures and 8 references, 6 of which are Soviet.

PRESENTED: April 11, 1958, by L. I. Sedov, Academician

SUBMITTED: March 24, 1958

Card 3/3

KOCHINA, N.N. (Moskva); MEL'NIKOVA, N.S. (Moskva)

Expansion of a piston in water. Prikl. mat. i mekh. 23 no.1: 93-100 Ja-F '59. (MIRA 12:2)
(Fluid mechanics)

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S/040/60/024/02/002/052

AUTHORS: Kochina, N. N., Mel'nikova, N. S. (Moscow)

TITLE: On the Motion of the Piston in an Ideal Gas

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol. 24, No 2 pp. 213-218

TEXT: The authors consider a gas motion caused by a piston which moves with the velocity $v_n = ct^m$. Such a motion can arise under punctiform explosion with divergent shock wave or under peripheral explosion with convergent shock wave. It is assumed that the gas possesses the density ρ_1 and the pressure $p_1 \neq 0$ in the initial moment. As independent variables and sought functions the authors introduce the nondimensional quantities

$$\lambda = \frac{r}{r_2}, \quad q = \frac{a_1^2}{c^2}, \quad f(\lambda, q) = \frac{v}{v_2}, \quad R(\lambda, q) = \frac{\rho}{\rho_2}, \quad P(\lambda, q) = \frac{p}{p_2}$$

where a_1 is the velocity of sound in the resting gas, r_2 the radius of the shock wave, c its velocity, v_2, ρ_2, p_2 the velocity, density and pressure behind the front of the shock wave. The problem leads to three partial non-linear differential equations which must satisfy in a domain of the λ, q-plane certain initial conditions for $q = 0$ and the boundary conditions on the piston and on the shock wave

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On the Motion of the Piston in an Ideal Gas

$(f(1,q) = R(1,q) = P(1,q) = 1$ for $\lambda = 1)$. Now it is assumed that the functions $f(x,q)$, $R(x,q)$, $P(x,q)$ permit the representation

(2.8) $f(x,q) = f_0(x) + qf_1(x) + \ldots$, $R(x,q) = R_0(x) + qR_1(x) + \ldots$,

$P(x,q) = P_0(x) + qP_1(x) + \ldots$

where f_0, R_0, P_0 correspond to the case $p_1 = 0$ (Ref.4-8) and where terms with higher powers of q are negligible. The $f_1(x)$, $R_1(x)$, $P_1(x)$ then must be determined from a linear system, where for the integration near the piston for f_0, R_0, P_0 the authors use the asymptotic solution of L. J. Sedov (Ref.1). The distribution of velocity, density and pressure for different q is graphically represented.

There are 2 figures, and 11 references: 8 Soviet, 1 English and 2 American.

SUBMITTED: August 27, 1959

Card 2/2

PHASE I BOOK EXPLOITATION SOV/5711

Korobeynikov, Viktor Pavlovich, Nina Sergeyevna Mel'nikova, and Yevgeniy Vasil'yevich Ryazanov

Teoriya tochechnogo vzryva (Theory of Point Detonation) Moscow, Fizmatgiz, 1961. 332 p. 5,000 copies printed.

Ed.: S. N. Shustov; Tech. Ed.: I. Sh. Aksel'rod.

PURPOSE: This book is intended for scientists interested in shock-wave propagation, and for aspirants and students in advanced courses in gas dynamics at schools of higher education. It may also be used by engineers concerned with problems of detonation.

COVERAGE: The book contains the results of work by Soviet and non-Soviet scientists on the theory of point detonation. The point-detonation theory arose in connection with the necessity of describing phenomena which take place in uniform media during detonations of charges of small volume and weight, but which develop high energy. The point-detonation theory makes it possible to obtain, with an accuracy sufficient for practical purposes,

much necessary data on the nature of the unsteady motion developed during a detonation. It should be mentioned that this theory may also be applied to problems of the flow of a superhigh-speed gas stream around blunt-nosed slender bodies and to problems of shock-wave propagation during electrical discharges and detonation of fine metal wires through which a pulsed current is passed. Over the last few years many works published mainly in various Soviet and non-Soviet journals have dealt with investigations of the motion of a gas during point detonations. In view of the absence of a complete presentation of the point-detonation theory, which is important in investigating various problems of gas dynamics, the authors of the book have endeavored to give a systematic presentation of its principal conditions and the more important results of research employing this theory. The book contains eight chapters. Chapter I sets forth general equations of one-dimensional unsteady motions and some mechanical and thermodynamic relationships. Here the problems of point detonation are formulated and the main results of studies dealing with this problem are reviewed. In Chapter II self-

simulating [automodeling] problems of detonation in an ideal gas having constant and variable initial density are reviewed, and the solution is given to the problem of the motion of a gas expelled by a piston. The approximation method of calculating problems which are not self-simulating is given in Chapter III. This method is based on the linearization of a gas-dynamics equation about a self-simulating solution. The stated method is used to solve point-detonation problems by taking into account counter-pressure and density variation with altitude, and also, to solve problems of the motion of a gas expelled by a piston. The application of the point-detonation theory to the aerodynamics of thin bodies is reviewed. Chapter IV contains the results of the numerical solution of a non-self-simulating spherical-charge detonation problem, and a comparison of these results with some experimental data. Also examined in Chapter IV are the problems of the asymptotic behavior of the solution near the detonation center and the laws of shock wave attenuation at great distances. In Chapter V approximation formulas are derived for calculating the parameters of spher-

ical, cylindrical, and plane detonation waves. In Chapter VI a method is given for setting up some exact solutions which describe the one-dimensional unsteady flow of a gas with shock waves. The application of this method to detonation phenomena is discussed. The aforementioned chapters review problems of adiabatic motions of an ideal gas with constant heat capacities. The last two chapters include problems formulated on the basis of other assumptions. Thus, in Chapter VII, problems of powerful detonation in an ideal gas under conditions of nonadiabatic motion in a disturbed zone are studied. One of the methods for calculating radiation is shown here. Chapter VIII deals with a number of problems connected with point detonation in a slightly compressible uniform medium, e.g., water. An investigation of the general characteristics of solutions to problems concerning powerful detonations is given for a broad class of self-simulating media. The book does not deal with questions connected with the calculation of gas viscosity, the effects of gravity, or ionization and dissociation processes since there are still many unsolved problems

in this area. A number of results obtained by the authors and published earlier in journal articles are included. Many of the subjects covered in the book were topics in a series of reports delivered at seminars on hydrodynamics at the Moscow State University. A bibliography of Soviet and non-Soviet literature is given at the end of the book. The book was written as follows: Chapters IV, V, Section 3 of Chapter II, and Section 6 of Chapter III were written by V. P. Korobeynikov; Chapters III and VIII, by N. S. Mel'nikova; Chapters II and VI, by Ye. V. Ryazanov; Chapter I, by Korobeynikov and Mel'nikova; Chapter VII, by Korobeynikov and Ryazanov; and Sections 2, 6, 8, and 9 of Chapter II, by Mel'nikova and Ryazanov. The authors participated jointly in compiling the problems reviewed in Sections 3, 4, and 5 of Chapter III, Sections 2 and 6 of Chapter IV, and Section 1 of Chapter VIII. It should be mentioned that Sections 3, 4, 5, 6, 7, and 9 of Chapter VIII were written by N. S. Mel'nikov and N. N. Kochina mainly on the basis of their articles. The authors thank Leonid Ivanovich Sedov for his valuable remarks concerning many of the problems

reviewed in the book; V. P. Karlikov, for his help in writing Section 5 of Chapter III; and Yu. L. Yakimov, for submitting the material for Section 8 of Chapter VIII and for his valuable comments. There are 74 references: 57 Soviet, and 17 English.

TABLE OF CONTENTS:

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S/020/61/138/002/012/024
B104/B207

26.1330

AUTHORS: Kochina, N. N. and Mel'nikova, N. S.

TITLE: The ways of solving the problem of a punctiform explosion in compressible media

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 138, no. 2, 1961, 326-329

TEXT: L. I. Sedov solved the problem of a strong explosion in an ideal gas (Metody podobiya i razmernosti v mekhanike (Methods of similarity and dimension methods in mechanics), M., 1957). Strong punctiform explosions in an ideal compressible medium were studied by N. N. Kochina and N. S. Mel'nikova (Prikl. matem. i mekh., 22, no. 1 (1958)) and Yu. L. Yakimov (Rasprostranenie udarnykh voln v ideal'nykh sredakh s proizvol'nymi fizicheskimi svoystvami (Propagation of shock waves in ideal media with arbitrary physical properties), dissertation, M., 1959). The present paper investigates the dependence of the solution of this problem on the explosion energy E_0, the initial pressure p_1 and the initial density ρ_1. The internal energy of an ideal medium as a function of

The ways of solving the problem of a...

pressure and density may be defined as follows:

$$\varepsilon(p, \rho) = \frac{p}{\rho}\varphi\left(\frac{p}{p_1}, \frac{\rho}{\rho_1}, \frac{p_1^*}{p_1}, \frac{p_2^*}{p_1}, \ldots, \frac{p_n^*}{p_1}, \frac{\rho_1^*}{\rho_1}, \frac{\rho_2^*}{\rho_1}, \ldots, \frac{\rho_m^*}{\rho_1}\right)$$

φ is a dimensionless function, p_1 and ρ_1 are the initial pressure and density, p_i^* and ρ_i^* the constants with the dimension of pressure and density respectively. The equation for a uniform, adiabatic, non-steady motion of an ideal medium has the following form:

$$\frac{\partial v}{\partial t} + v\frac{\partial v}{\partial r} + \frac{1}{\rho}\frac{\partial p}{\partial r} = 0, \quad \frac{\partial \rho}{\partial t} + \frac{\partial \rho v}{\partial r} + \frac{(\nu-1)\rho v}{r} = 0,$$
$$\left(\frac{\partial \varepsilon}{\partial \rho} - \frac{p}{\rho^2}\right)\frac{d\rho}{dt} + \frac{\partial \varepsilon}{\partial p}\frac{dp}{dt} = 0, \qquad (2)$$

where v, is the velocity, t, the time, r, the Euler coordinate, $\nu = 1$ for plane waves, $\nu = 2$ for cylindrical waves, and $\nu = 3$ for spherical waves. In the shock wave moving in an unperturbed medium ($v_1 = 0$) the following holds:

$$-\rho_1 c = \rho_2(v_2 - c), \quad p_1c^2 + p_1 = \rho_2(v_2 - c)^2 + p_2,$$
$$\varepsilon_2 - \varepsilon_1 = {}^1/_2(p_1 + p_2)(1/\rho_1 - 1/\rho_2) \qquad (3)$$

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The ways of solving the problem of a...

The indices 2 refer to the shock wave front. The dimensionless coordinates

$$l = \frac{r}{r_0}, \tau = \frac{t}{t_0}, \nu, \frac{p_1^\circ}{p_1}, \frac{p_2^\circ}{p_1}, \ldots, \frac{p_n^\circ}{p_1}, \frac{\rho_1^\circ}{\rho_1}, \frac{\rho_2^\circ}{\rho_1}, \ldots, \frac{\rho_m^\circ}{\rho_1}; \quad (6)$$

$$\text{and} \quad r_0 = (E_0/p_1)^{1/\nu}, \quad t_0 = E_0^{1/\nu}\rho_1^{1/2}p_1^{-(\nu+2)/2\nu}. \quad (7)$$

are introduced and it is shown that, if the internal energy is assumed as a linear function of pressure

$$\varepsilon(p, \rho) = \frac{p_1^\circ}{\rho_1^\circ}[P\varphi(R) + \Delta(R)] \quad \left(R = \frac{\rho}{\rho_1^\circ}, \; P = \frac{p}{p_1^\circ}\right), \quad (9)$$

from (3) the explicit expressions

$$P_2 = P_1 + \frac{\Delta(R_1) - \Delta(R_2) + P_1[\varphi(R_1) - \varphi(R_2) + 1/R_2 - 1/R_1]}{\varphi(R_2) - 1/2(1/R_1 - 1/R_2)}, \; f_2 = 1 - \frac{R_1}{R_2}, \quad (10)$$

$$q = \frac{B(1 - R_1/R_2)\{R_1[\varphi(R_2) + 1/2R_2] - 1/2\}}{P_1[\varphi(R_1) - \varphi(R_2)] + \Delta(R_1) - \Delta(R_2) + P_1(1/R_1 - 1/R_2)} \left(B = \frac{\rho_1^\circ a_1^2}{p_1^\circ}, \; f = \frac{v}{c}\right).$$

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are obtained. (6) and (7) show that the explosion energy depends solely on the variables l and τ (or the variable $\lambda = r/r_2$, $q = a_1^2/c^2$). Thus, it is possible, if the solution for a certain energy $E_o^{(1)}$ is known, to apply the solutions also to another energy $E_o^{(2)}$. The equations

$$r^{(2)} = (E_o^{(2)}/E_o^{(1)})^{1/\nu} r^{(1)}, \quad t^{(2)} = (E_o^{(2)}/E_o^{(1)})^{1/\nu} t^{(1)} \qquad (11)$$

hold, where $r^{(1)}$ and $t^{(1)}$ are the coordinates of the initial energy $E_o^{(1)}$ and $r^{(2)}$, $t^{(2)}$, those of $E_o^{(2)}$. It is furthermore shown that the equations

$$r^{(2)} = (E_0^{(2)} p_1^{(1)}/E_0^{(1)} p_1^{(2)})^{1/\nu} r^{(1)},$$
$$t^{(2)} = (E_0^{(2)}/E_0^{(1)})^{1/\nu} (p_1^{(2)}/p_1^{(1)})^{-(\nu+3)/2\nu} (\rho_1^{(2)}/\rho_1^{(1)})^{1/2} \cdot t^{(1)}, \qquad (12)$$

hold. The solutions of the problem for $\varepsilon = \frac{p}{\rho} \varphi(\rho/\rho_1, \rho_1^*/\rho_1, \rho_2^*/\rho_1, \ldots, \rho_m^*/\rho_1)$ and $\varepsilon = \frac{p}{\rho} \varphi(p/p_1, p_1^*/p_1, p_2^*/p_1, \ldots, p_n^*/p_1)$ of the internal energy are

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The ways of solving the problem of a...

discussed. The non-punctiform explosion is discussed in brief and it is shown that a conversion to another initial energy, as shown above, is not possible. The results of Brode (J. Appl. Phys., 26, No. 2, (1955)) are discussed. To obtain a general picture of motion, it is necessary to calculate for long periods which is done with asymptotic formulas. The asymptotic relation $r_2 = a_1 t$ may be applied to such a problem, since, after longer intervals, the velocity of the shock wave is almost equal to the velocity of sound in the unperturbed medium. Pressure, velocity, and density depend in the front of the shock wave on the shock wave radius. Finally, the conditions are given for a medium for which, after a punctiform explosion, motion in the entire perturbed region may be approximated as motion of an incompressible liquid with the exception of a certain region in the vicinity of the shock wave. These conditions are: $\partial\varepsilon(p, \rho_0)/\partial p = 0$ (15) and $\varepsilon(p, \rho) = -p/\rho + f(p)$ (16). If in the investigated medium equation (15) may be regarded as satisfied, (16), however, not, the solution for a punctiform explosion in an incompressible medium may be regarded as asymptotic solution of this problem. There are 12 references: 9 Soviet-bloc.

Card 5/6

The ways of solving the problem of a...

ASSOCIATION: Matematicheskiy institut im. V. A. Steklova Akademii nauk SSSR (Mathematics Institute imeni V. A. Steklov of the Academy of Sciences USSR)

PRESENTED: December 15, 1960, by L. I. Sedov, Academician

SUBMITTED: December 3, 1960

X

Card 6/6

MEL'NIKOVA, N.S. (Moskva); SALAMAKHIN, T.M. (Moskva)

Calculation of point explosions in various gases. PMTF no.4:155-160 Jl-Ag '64. (MIRA 17:10)

MELNIKOVA, N. T.

USSR/Metals - Ordering

Jun 52

"Texture of Magnesium, Zinc and Cadmium Layers Obtained During Condensation of a Molecular Beam," N. T. Melnikova, Ye. D. Shchukin, M. M. Umanskiy, Moscow State U

"Zhur Eksper i Teoret Fiz" Vol XXII, No 6, pp 775-779

Investigates the structure of layers of various hexagonal-system metals obtained by condensation of a mol beam on a non-cooled or cooled to -70°C background. A law, 1st observed for zinc, holds

217T46

for all (Mg, Zn, Cd) metals. The law concerns orientation of crystallites which is connected with the direction of the mol beam and leads the plate to quasi-monocryst state. Received 29 Sep 51.

217T46

PITSKEL', L.N., kandidat tekhnicheskikh nauk; KISELEV, P.M., inzhener; MEL'NIKOVA, N.V., inzhener.

Using vibrators in laying large brick blocks. Nov.tekh.i pered. op. v stroi. 19 no.3:9-12 Mr '57. (MLRA 10:4)
(Vibrators) (Building blocks)

MEL'NIKOVA, O., arkhitektor; GRANATKIN, G., arkhitektor

Universal four-story industrial building. Prom.stroi.i inzh.soor. 4 no.1:10-14 Ja-F '62. (MIRA 15:8)
(Industrial buildings) (Precast concrete construction)

KUKHARENKO, A.A., agronom; MEL'NIKOVA, O.M.

Utilizing waste water sedimentation in suburban farming and landscape gardening. Gor.khoz.Mosk.28 no.2:23-27 F '54. (MLRA 7:5)
(Sewage as fertilizer)

MEL'NIKOVA, O. M.

"Cooling and Freezing Methods of Storing Raw Mackerel for Sterilized Canning." Acad. Sci. USSR, Far Eastern Branch imeni V. L. Komarov, VladivostoK, 1955. (Dissertation for the Degree of Candidate in Technical Sciences)

SO: Knizhnaya Letopis', No. 22, 1955, pp 93-105

MEL'NIKOVA, O.M.

Rapid stripping of cleaning bottoms in the 3d International mines.
Biul. TSIIN tsvet. met. no.22:9 '57. (MIRA 11:8)
(Mining engineering)

LUK'YANOV, V.I.; MYSLIN, V.A.; SHNEYEROV, A.I.; KHORKHOT, A.Ya.; YELENSKIY, M.S.; MEL'NIKHOVA, O.M.; PLESHKOV, L.Ye.; OHLOV, V.V.; ZLATOLINSKIY, V.N.; VISHNEVSKIY, F.L.; LAPSHENKOV, P.G.; MAKHOV, M.S.; KUKAVISHNIKOV, I.D.; LYTKIN, K.F.; KOZHEVNIKOV, O.A.; ZORKIN, G.N.; NORMAN, B.B.; TUMANOV, N.S.; SEREBRYANIKOV, S.M.; VOLKOV, N.G.; NOVIKOV, P.G.; FRIDBERG, G.V., inzh., red.izd-va; GELLINSON, P.G., tekhn.red.

[Designing chief plans for industrial plants; principal methods] Proektirovanie general'nykh planov promyshlennykh predpriiatii; osnovnye polozheniia. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 103 p.
(MIRA 13:6)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut gradostroitel'stva i rayonnoy planirovki. 2. Nauchno-issledovatel'skiy institut gradostroitel'stva Akademii stroitel'stva i arkhitektury USSR (for Khorkhot, Yelenskiy, Mel'nikhova). 3. Gosudarstvennyy institut proyektirovaniya metallurgicheskikh zavodov (Gipromez) (for Pleshkov).
(Continued on next card)

MEL'NIKOVA, O.P.; FEDOROVSKAYA, N.A.

Comparison of data of Valdman's and Lepp's endothelial tests.
Vop. pat. krovi i krovoobr. no.5:91-94 '59. (MIRA 15:4)
(BLOOD--EXAMINATION)

29636

16,8000

AUTHORS: Kovchin, S.A., Candidate of Technical Sciences ...
O.S., Engineer (see ...)

TITLE: Determination of tra... quency characteristics

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy ... no. 1?, 1961, 7?-81

TEXT: The authors describe a new method of determining ... of elements in the automatic control system ... simultaneously taking the frequency characteristics of ... the unknown element ... tions sufficiently close to the ... given by the transfer function for the unknown element ... generalized form:

$$W_{el}(p) = \frac{b_0 p^m + b_1 p^{m-1} + \dots + b_{m-1} p + b_m}{p^q (a_0 p^n + a_1 p^{n-1} + \dots + a_{n-1} p + a_n)}$$

Card 1/2

29030
[illegible]

Determination of transfer ...

[Abstracter's note: Symbols are [illegible] in the [illegible]] [illegible]
only suitable for determining the transfer function [illegible]
the degree of the polynomial [illegible]
[illegible] and [illegible]
[illegible]

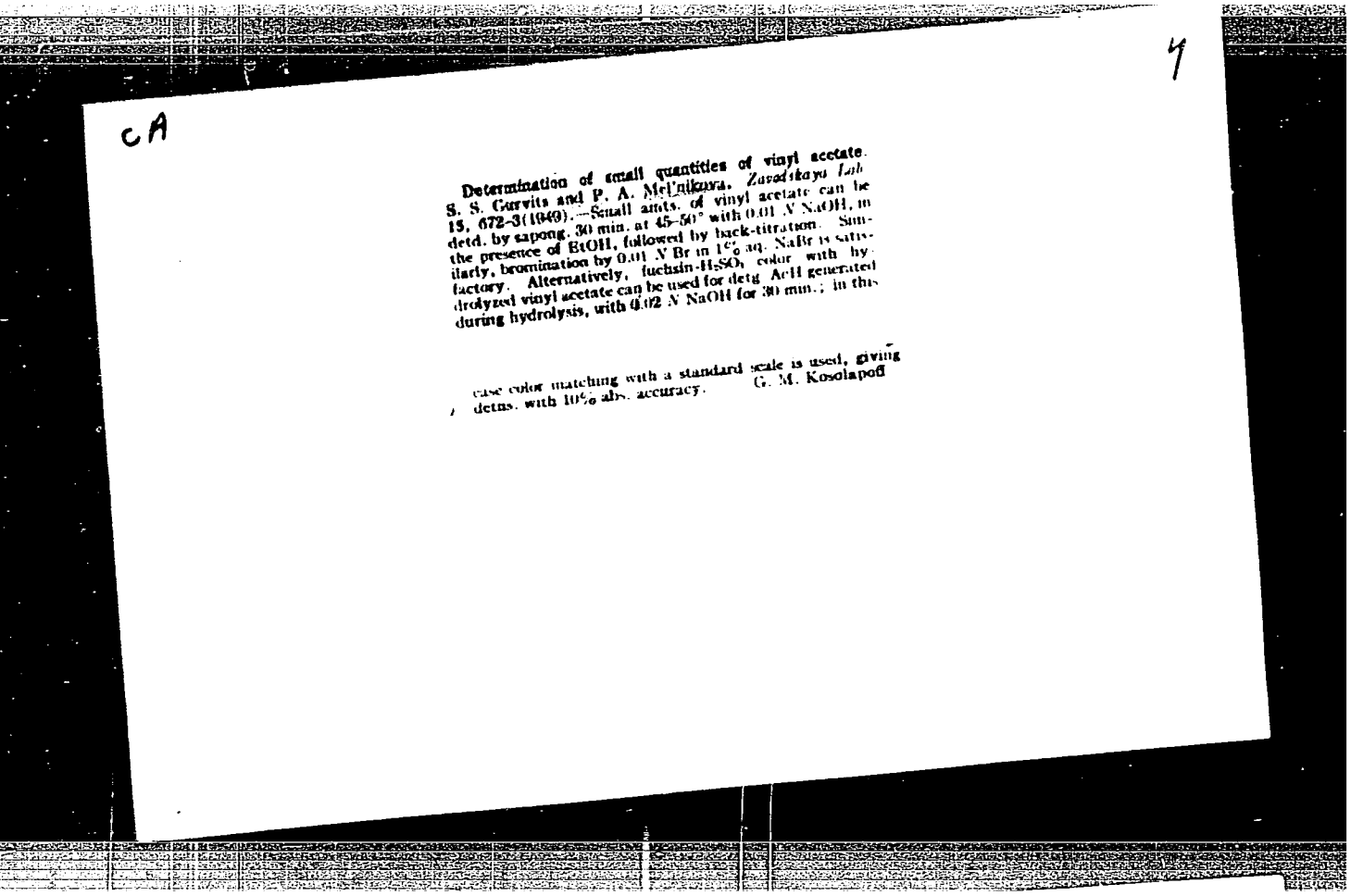
ASSOCIATION: Kafedra elektr[illegible] oborudovaniya [illegible]
Leningradskiy politekhnicheskiy [illegible] (Department of [illegible]
Electrical Equipment [illegible]
grad Polytechnic Institute [illegible] (Leningrad
[illegible]
[illegible]
[illegible]

SUBMITTED: [illegible]

Card 2/2

MEL'NIKOVA, O.Ye.

Role of the slogan "Control by the workers" in the struggle to carry out the socialist revolution in Turkestan. Izv.AN Uz.SSR 3:81-88 '56. (MIRA 12:6)
(Turkmenistan--Russian revolution, 1917-1921)



4

CA

Determination of small quantities of vinyl acetate. S. S. Gurvits and P. A. Mel'nikova. *Zavodskaya Lab.* 15, 672-3(1949).—Small amts. of vinyl acetate can be detd. by sapong. 30 min. at 45–50° with 0.01 *N* NaOH, in the presence of EtOH, followed by back-titration. Similarly, bromination by 0.01 *N* Br in 1% aq. NaBr is satisfactory. Alternatively, fuchsin-H_2SO_3 color with hydrolyzed vinyl acetate can be used for detg. AcH generated during hydrolysis, with 0.02 *N* NaOH for 30 min.; in this case color matching with a standard scale is used, giving dctns. with 10% abs. accuracy. G. M. Kosolapoff

Mel'nikova, P.A.

FOMICHEVA, N. I.; MEL'NIKOVA, P. A.

Rapid determination of small quantities of dimethylaniline in air. Gig. sanit. Moskva no. 5:49-52 May 1952. (CLML 22:3)

1. Of the All-Union Scientific-Research Institute for the Protection of Labor, VTsSPS.

ZHITKOVA, A.S.;BULYCHEVA, A.I.;MEL'NIKOVA, P.A.

Cleaning of special clothing from organic mercury compounds. Gig. sanit., Moskva no.10:31-33 Oct 1952. (CIML 23:4)

1. Of Moscow Scientific-Research Institute for the Protection of Labor VTsSPS.

VASKEVICH, D.N.; BULYCHEVA, A.I.; MEL'NIKOVA, P.A.

Rapid method of determining the amount of carbon monoxide in the air in factories. Vod.i san.tekh. no.1:12-13 Ja '56. (MLRA 9:5)

(Air--Analysis) (Ventilation)

MELNIKOVA, P.D.

USSR/Weeds and Their Control.

Abs Jour : Ref Zhur - Biol., No 3, 1958, 11171

Author : Mel'nikova, P.D.
Inst :
Title : The Germinating Ability of Dodder Seed in Water

Orig Pub : Dokl. Akad Nauk UzSSR, 1956, No 4, 41-44

Abstract : Seeds of the field dodder (Cuscuta campestris Juncker) and the thin-stemmed dodder (C. approximata Balingt.), after insertion into gauze bags, were placed in jars in which the water was changed daily. Temperature and illumination were at room levels. The experiments indicated the great hardiness of dodder seed under extremely wet conditions. After six months in this water they had not completely lost their germinating power. To prevent these seeds from being carried around in irrigation water the following measures are recommended: the banks of the irrigation net should be cleared of weeds, settling tanks,

Card 1/2

MEL'NIKOVA, P. I.

USSR/Chemistry - Toxic substances; Analytical FD-1736

Card 1/1 : Pub. 50-12/18

Authors : Bulycheva, A. I., Mel'nikova, P. I.

Title : Determination of small quantities of dianisidine in the air of industrial establishments

Periodical : Khim. prom., No 1, 50-52, Jan-Feb 1955

Abstract : Have devised a standard procedure for the determination of dianisidine in the air of industrial establishments and recommend that this procedure be used in checking whether or not the content of dianisidine in the air complies with the regulation of NSP 101-51 [Normy Sanitarnogo Proektirovaniya - Standards of Sanitary Planning] on that score. One figure.

Institution : All-Union Scientific Research Institute of Labor Protection, All-Union Central Council of Labor Unions

MELNIKOVA P.I.

EXCERPTA MEDICA Sec 13 Vol 13/2 Dermatology Feb 59

473. SENEAR-USHER SYNDROME (Russian text) - Melnikova P.I. District Dermato-Venereol. Disp., Ivanovo - SBORN. NAUCHNO-PRAKT. VOPR. DERM. I VENER. (Ivanovo) 1957 (131-132)

A Senear-Usher syndrome developed in a 19-year-old woman suffering from an abnormal menstrual cycle, acrocyanosis of limbs and diffuse alopecia. Marked improvement followed a course of ACTH (26 days, a total of 520 U.). At the same time vascular spasms diminished, acrocyanosis receded and hair growth was observed. Endocrinological abnormalities are considered of aetiological importance in the development of the syndrome in this particular case.

Mashkilleison Jr - Moscow (S)

MEL'NIKOVA, R.; PYSHKALO, G.

A dangerous quarantine pest Ceratitis capitata. Zashch. rast. ot vred. i bol. 10 no.5:49-51 '65. (MIRA 18:6)

1. Nachal'nik Krymskoy karantinnoy inspektsii (for Mel'nikova).
2. Direktor Krymskoy karantinnoy laboratorii (for Pyshkalo).

MEL'NIKOVA, R.A.

MEL'NIKOVA, R.A., kand.med.nauk

History of Soviet public health planning. Sov.zdrav. 16 no.11:38-40 N '57. (MIRA 11:1)

1. Iz kafedry organizatsii zdravookhraneniya (zav. - doktor meditsinskikh nauk prof. T.Ya.Tkachev) Voronezhskogo meditsinskogo instituta.

(PUBLIC HEALTH
in Russia, problems in improvement in planning (Rus))

MEL'NIKOVA, R.D.

Vegetation of the western Muyun-Kum. Trudy Inst. bot. AN Uz.SSR no.5:50-196 '59. (MIRA 14:5)
(Muyun-Kum--Botany)

MEL'NIKOVA, R.M.

SHCHELOCHKOVA, S.P.; MAKARTSEVA, T.V.; GARSHIN, Ye.A.; MOISEYEVA, Ye.I.; BLAGODAROVA, T.N.; MAKAROVA, L.I.; MEL'NIKOVA, R.M.; REVIZOVA, V.Ye.; YUSHKEVICH, G.I.; YEVPRYNTSEVA, Z.A.; GALYAMOVA, M.F.; DROZDOVA, L.M.; SALIKOVA, V.N.; KONNOV, F.Ya., red.; ANTONOV, V.P., tekhn.red.

[Economy of the province and city of Kuybyshev; a statistical manual] Narodnoe khoziaistvo Kuibyshevskoi oblasti i goroda Kuibysheva; statisticheskii sbornik. Kuibyshev, Kuibyshevskoe otd-nie Gosstatizdata, 1957. 197 p. (MIRA 11:3)

1. Kuybyshevskaya oblast'. Statisticheskoye upravleniye. 2. Statisticheskoye upravlneiye Kuybyshevskoy oblasti (for all, except Konnov, Antonov)

(Kuybyshev Province--Statistics)

L 17085-63 EWA(b)-2/EWP(j)/EWT(l)/EWT(m)/BDS AFFTC/ASD Pa-4/Pc-4/Pv-4
RM
ACCESSION NR: AT3004528 S/2943/61/000/003/0108/0112

AUTHORS: Stasenkova, K. P.; Mel'nikova, R. N. 70

TITLE: Investigation on the toxicity of some isoalcohols, higher alcohols, and melamine-formaldehyde resins 15

SOURCE: AMN SSSR. Toksikologiya novy*kh promy*shlenny*kh khimicheskikh veshchestv, no. 3, 1961, 108-112

TOPIC TAGS: toxicity, isoalcohol, higher alcohol, melamine-formaldehyde resin

ABSTRACT: An investigation was conducted on 160 white mice, 60 rats, and 16 rabbits to determine the toxicity of a mixture of primary and secondary alcohols with a 4-6 or 7-9 carbon chain and respective boiling points of 112-146C and 138-175C. A mixture of fatty alcohols with a 7-10 carbon chain and a 165-225C boiling point was also studied. The investigation included solutions of a melamine-formaldehyde resin in each of the enumerated alcohol mixtures and in a mixture of butanol with the 112-148C boiling fraction. The study embraced the toxicity via inhalation of vapors, peroral administration, and external application. Mice and rats were exposed for 2 hours to vapors of the enumerated fluids, 200 ml of which were placed at room temperature into a 107-liter chamber provided with a fan.

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L 17085-63
ACCESSION NR: AT3004528

During exposure a narcotic and irritating effect was observed, but no pathological changes were found on autopsy, even after a daily 2-hour exposure for a 3-week period. The peroral administration of 10 gm/1g produced narcosis and resulted in death within 1 hour with the 112-148C and 138-175C boiling fractions (within 2 days for the 165-225C boiling fraction). A 5 gm/1 dose of the 112-148C boiling fraction proved fatal to only 60% of the animals, the higher boiling fractions resulting in survivals. Autopsy of the surviving animals revealed congestion of the brain and internal organs, including the gastrointestinal tract, where occasional hemorrhages were observed. The peroral administration of melamine-formaldehyde resin solutions produced symptoms similar to the alcohol fractions. A 1-hour dip of the tail of mice into test tubes with the enumerated solutions proved to be practically harmless, while external application on the skin caused local inflammation with complete recovery within 2 weeks. The 138-175C boiling fraction proved the most toxic. Applications on the conjunctiva were ineffective.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 21Aug63 ENCL: 00

SUB CODE: CH NO REF SOV: 001 OTHER: 001

Card 2/2

AKASTELOV, A.I.; MEL'NIKOVA, R.N.; SPITSIN, V.I.

Ultrasonic cleaning of tire tube valves. Kauch. i rez. 23 no.1: 49-50 S '64.

1. Dnepropetrovskiy shinnyy zavod.

28 (5)

AUTHORS: Zemlyanova, L. I., Mel'nikova, S. A. SOV/32-25-6-37/53

TITLE: Electron Microscopic Investigation of Rubber and Filling Materials (Elektronnomikroskopicheskoye issledovaniye rezin i napolniteley)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 6, pp 745-746 (USSR)

ABSTRACT: Investigations of the surface of rubber are usually carried out by replica in two steps. The first replica is made on collodion, methyl acrylate etc, in which case, however, frequently a larger amount of the substance to be investigated is taken. In the case under investigation the replica are produced by means of X-ray films. The test sample is cooled in liquid nitrogen and then the X-ray film wetted with acetone is pressed on to it. Next, a quartz- or carbon film is applied to the contact surface of the X-ray film and thus the second replica is obtained after the dissolution of the X-ray film in acetone. Investigations were also carried out on carbon black by means of a chemical- or ultrasonic dispersion with an aqueous ammonia solution (Fig 2). Herefrom it may be seen that chemical dispersion produces far smaller particles than ultrasonic dispersion. There are 2 figures.

Card 1/1

MEL'NIKOVA, S.F., inzh.

Using ultrasonics in ore dressing. Obog. i brik. ugl. no.8:43-56 '58. (MIRA 12:10)
(Ultrasonic waves--Industrial application)
(Ore dressing)

MEL'NIKOVA, S.G., inzh.

Twin shaking screen. Sbor. inform. po obog. i [illegible]. ugl. no. 1: 41 '57. (MIRA 12:9)

(Screens (Mining))

MEL'NIKOVA, S.G., inzh.

Coal preparation in Great Britain. Sbor. inform. po obog. i brik. ugl. no.4:55-60 '57. (MIRA 11:6)
(Great Britain--Coal preparation)

MEL'NIKOVA, S.G., inzh.

New machine for unloading open-top railroad freight cars. Obog. i brik. ugl. no.6:62 '58. (MIRA 12:7)
(Railroads--Freight cars)
(Loading and unloading--Equipment and supplies)

MEL'NIKOVA, S.G., inzh.

Grizzlies with inductively actuated screen cloth. Obog. i brik. ugl. no.7:69-73 '58. (MIRA 12:7)
(Screens (Mining)—Electric driving)

KORONELLI, T.V.; MEL'NIKOVA, S.G.; SAGITULLIN, R.G.

Effect of some additives on the metabolism of Claviceps purpurea culture (strain PRL-1980). Vest. Mosk. un. Ser. 6: Biol., pochv., 20 no.6:23-28 N-D '65. (MIRA 19:1)

1. Kafedra biologii pochv i Kafedra organicheskoy khimii Moskovskogo gosudarstvennogo universiteta.

MEL'NIKOVA, S.I., inzhener.

Standard receiver and keyboard diagram for Baudot apparatuses. Vest.sviazi 7 no.8:22 Ag '47. (MLRA 9:1)
(Telegraph--Printing system)

MEL'NIKOVA, S. I. PA 20T100

USSR/Radio Sep 1947
Communications - Equipment
Electrical Equipment

"Improving the Operation of Duplex Communications Equipped with ST-35 Apparatus," S. I. Mel'nikova, 5 pp

"Vestnik Svyazi, Elektro-Svyaz'" Vol VII, No 9 (90)

N. L. Ostapovich at Voronezh submitted improvements on the communication efficiency of the ST-35 apparatus.

20T100

MEL'NIKOVA, S. I.

USSR/Communications Jul 48
Efficiency, Industrial

"The Progress of the All-Union Inspection for Rationalization and Inventive Initiative at Communications Enterprises," S. G. Kanevskiy, S. I. Mel'nikova, 1 p

"Vest Svyazi - Elektrosvyaz'" No 7 (100)

Describes progress of inspection system in various parts of USSR.

7/49T28

KUZIN, [illegible].M.; KOPYLOV, V.[illegible]; MEL[illegible], [illegible]

Effect of ioniz[illegible] [illegible] the [illegible] in plants. [illegible]

[illegible]. Institut bio[illegible]

L 25811-66 EWT(1)/EWT(m)/T JK
ACC NR: AP6015925 SOURCE CODE: UR/0216/65/000/004/0507/0520

AUTHOR: Kuzin, A. M.; Plyshevskaya, Ye. G.--Plyshevskaya, E. G.; Kopylov, V. A.; Ivanitskaya, Ye. A.--Ivanitzkaya, E. A.; Lebedeva, N. Ye.--Lebedeva, N. E.; Kolomiytseva, I. K.--Kolomiytzeva, I. I.; Mel'nikova, S. K.--Melnikova, S. K.; Tokarskaya, V.I.

ORG: Institute of Biophysics, AN SSSR, Moscow (Institut biologicheskoy fiziki AN SSSR)

TITLE: Function of the orthophenol-orthoquinone system in the early mechanism of action of ionizing radiation on the organism

SOURCE: AN SSSR. Izvestiya. Seriya biologicheskaya, no. 4, 1965, 507-520

TOPIC TAGS: ionizing radiation, radiation biologic effect, radiation plant effect, tyrosine, sorption, oxidation, DNA, biosynthesis, radiation sickness

ABSTRACT: The authors concluded from a variety of experiments on plants and animals that the initial processes in the irradiated organism develop in the following sequence:

(1) During irradiation the formation of active radicals causes very slight radiochemical oxidation of the phenols present in the cell, chiefly tyrosine.

(2) The resultant oxidation products activate tyrosinase, which immediately after irradiation leads to the formation of large quantities of biologically active orthoquinones.

(3) The resultant orthoquinones are actively sorbed by the cell nuclei.

UDC: 577.391

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ACC NR: AP6015925

(4) The orthoquinones sorbed by the nuclei inhibit DNA synthesis, block the incorporation of thymidine into newly synthesized DNA, and alter their fluorescence in the presence of acridine orange.

(5) The blocking of nuclear DNA by the orthoquinones sharply inhibits cell division, giving rise to leukopenia, arrested growth, weight loss, chromosomal aberrations, and, in sufficiently high concentrations, death of the organism. Orig. art. has: 10 figures and 4 tables. [JPRS]

SUB CODE: 06, 07 / SUBM DATE: 22Jan65 / ORIG REF: 021 / OTH REF: 010

Card 2/2 CC

BAGDASAROV, K.N.; KOVALENKO, P.N.; MEL'NIKOVA, S.S.

Detection of cobalt [with summary in English]. Zhur.anal.khim. 12 no.4:564-565 Jl-Ag '57. (MIRA 10:10)

1.Rostovskiy-na-Donu gosudarstvennyy universitet.
(Cobalt)

32840
S/020/62/142/002/021/029
B106/B101

5.3620

AUTHORS: Illarionov, V. V., Mel'nikova, S. V., and Soklakov, A. I.

TITLE: Polysulfides of arsenic and phosphorus

PERIODICAL: Akademiya nauk SSSR Doklady, v. 142, no. 2, 1962, 366-369

TEXT: The systems sulfur-arsenic and sulfur-phosphorus were examined in the composition range of 0 - 7 gram-atom per cents of arsenic and phosphorus, respectively, to ascertain whether types of new molecules were formed. Mixtures of sulfur, As_2S_3, P_4S_{10} were heated to ~300°C for 6 hrs in evacuated thick-walled quartz ampuls. After cooling, the comminuted ampul content was extracted for 14 hrs with carbon disulfide, whereby the molecular forms with relatively few atoms were dissolved. Both extract and insoluble residue were analyzed on both arsenic and phosphorus. In the sulfur-arsenic system, the arsenic is embedded in long linearly polymerized sulfur molecules. At the same time, the arsenic is bound to low-molecular forms by the reaction of the stable arsenic sulfide with S_8 rings and the short biradicals of the π-form of sulfur.

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Polysulfides of arsenic and phosphorus

These are dispersed in the bulk of the long linear forms and form a product insoluble in carbon disulfide, owing to network polymerization during extraction. The solid product remaining after the carbon disulfide has been evaporated dissolves only partly on a second extraction with carbon sulfide. The soluble part is almost pure sulfur, while the insoluble part is a sulfide with 25 sulfur atoms per arsenic atom. The insoluble residue after the first extraction contains, regardless of the initial composition of the mixture, about 9 sulfur atoms per arsenic atom. In the sulfur-phosphorus system the sample portion which is soluble in carbon disulfide is much smaller than in the sulfur-arsenic system. The number of sulfur atoms per phosphorus atom in the insoluble portion depends on the initial phosphorus content of the sample. If this content is less than 4 gram-atom per cents, the number of sulfur atoms is 25, but it is only 12 in the case of high phosphorus contents. No insoluble residue is left over from a second extraction with carbon disulfide. X-ray analyses, evaluated with a "Strela" computer at the Vychislitel'nyy tsentr Moskovskogo universiteta (Computer Center of Moscow University) showed that the interatomic distance sulfur-sulfur in the sulfur-arsenic system is about 2.18 Å in the portion remaining after the first extraction,

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Polysulfides of arsenic and phosphorus

as against 2.30 Å in the nonextracted mixtures. The extraction of the low-molecular forms results in a loose packing which weakens the intermolecular, and strengthens the intramolecular interactions, whereby the interatomic distances sulfur-sulfur are narrowed. The interatomic distance of pure sulfur (2.07 Å) and the distance between sulfur and arsenic (2.30 Å) appear in the insoluble parts after the second extraction due to the polymerization processes of biradical molecules. Part of the sample, which was removed from it in the first extraction, is unstable in structure. Already after 4 hrs the distance 2.18 Å disappears, which is probably related to a partial decay of the chain structure and the formation of S_{∞} molecules. No investigations of this kind were conducted in the sulfur-phosphorus system, since the soluble part of the samples was considerably smaller, and no substantial structural changes of the samples were observed before and after extraction. Academician S. I. Vol'fkovich is thanked for having made the present investigation possible. G. S. Zhdanov is mentioned. There are 2 figures, 2 tables, and 7 references: 1 Soviet and 6 non-Soviet. The three references to English-language publications read as follows: J. van Wazer, Phosphorus and its Compounds, N. Y., 1958, p. 289 and

Card 3/4

32840

Polysulfides of arsenic and phosphor...

p. 301; C. Gee, J. Polymer Sci., [illegible]

ASSOCIATION: Nauchno-issledovatel'skiy institut [illegible] i insektofungitsidov im. Ya. V. Samoylova (Scientific Research Institute of Fertilizers and Insecto-Fungicides imeni Ya. V. Samoylov)

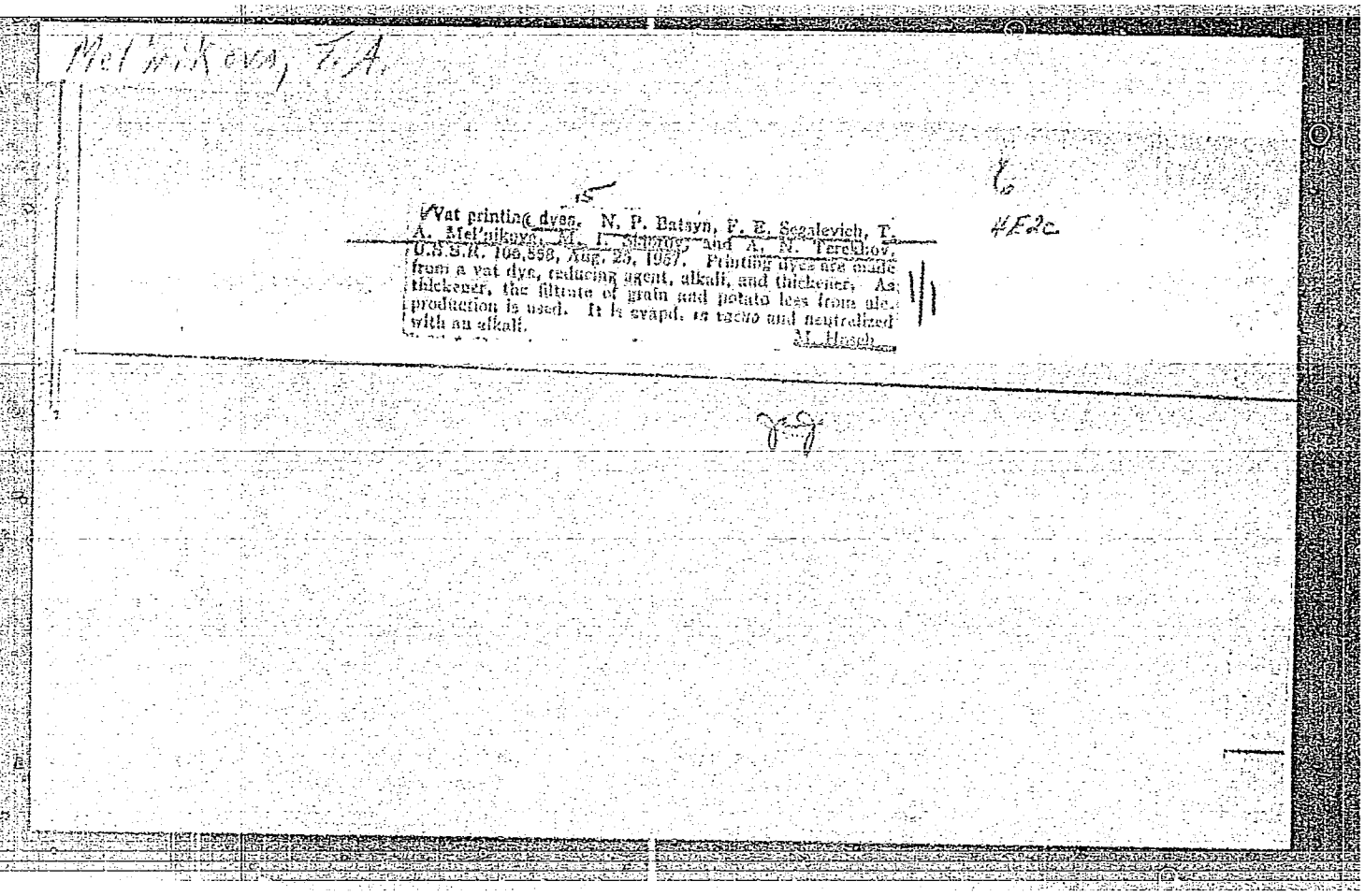
PRESENTED: July 31, 19[illegible] by I. I. V[illegible], Academician

SUBMITTED: July 29, 19[illegible]

Card 4/4

MEL'NIKOVA, T.

On the 250th anniversary of the Academy of Sciences Library and its cartographic fund. Izv. Vses. geog. ob-va 96 no.6: 453-458 N-D '64 (MIRA 18:1)



Mel'nikova, T. A.

Vat printing dyes. N. P. Batsyn, P. E. Segalevich, T. A. Mel'nikova, M. I. Shmidov, and A. N. Terekhov. U.S.S.R. 108,558, Aug. 25, 1957. Printing dyes are made from a vat dye, reducing agent, alkali, and thickener. As thickener, the filtrate of grain and potato less from alc. production is used. It is evapd. to taste and neutralized with an alkali.

M. Hoseh

SUBOROVSKAYA, N.A., doktor tekhn.nauk; VOSKRESENSKAYA, M.M., kand.tekhn. nauk; MEL'NIKOVA, T.A., inzh.

Determination of beryllium in minerals and ores containing beryllium. Trudy Inst.gor.dela 6:63-66 '60. (MIRA 14:4)

(Beryllium—Analysis)

KUPRIYANOVA, Z.V.; ROTSHTEYN, A.G., kand. ekonom. nauk; STOMAKHIN, V.I. Prinimali uchastiye: MEL'NIKOVA, T.A., inzh.; SEROBABOVA, R.I., inzh.; BOGDNA,S.L., red. izd-va; IGNAT'YEV, V.A., tekhn. red.

[Planning labor productivity in construction] Planirovanie proizvoditel'nosti truda v stroitel'stve; nauchnoe soobshchenie. Moskva, Gos.izd-vo lit-ry po stroit., arkhit., i stroit. materialam, 1961. 75 p. (MIRA 15:1)

1. Nauchno-issledovatel'skiy institut ekonomiki stroitel'stva Akademii stroitel'stva i arkhitektury SSSR (for Rotshteyn, Kupriyanova, Mel'nikova, Serobabova). 2. Nauchno-issledovatel'skiy ekonomicheskiy institut Gosudarstvennogo ekonomicheskogo soveta SSSR (for Stomakhin).
(Construction industry--Labor productivity)

MEL'NIKOVA, T. A.

Mel'nikova, T. A.

"The Effect of Certain New Cholinolytics (Anacaine, Difacyl, and Tetamon-I) on the Secretory Functions of the Intestinal Tract (Experimental Investigation)." Leningrad Sanitary-Hygiene Medical Inst. Leningrad, 1954. (Dissertation for the Degree of Doctor in Medical Science)

So: Knizhnaya letopis', No. 27, 2 July 1955

USSR / Microbiology. Antibiosis and Symbiosis. Antibiotics. F

Abs Jour : Ref Zhur - Biologiya, No 5, 1959, No. 19474

Author : Vedeneyeva, V. V.; Konokotina, A. G.; Mel'nikova, T. A.

Inst : Leningrad Chem.-Pharmaceutical Institute

Title : Antibiotic Properties of Preparation No. 13

Orig Pub : Sb. nauchn. tr. Leningr. khim.-farmatsevt. in-t, 1957, 3, 30-52

Abstract : Antibiotic 13 is obtained from Penicillium 214, which is related to the type "asymmetrica fasciculata". In its properties, antibiotic 13 (I) differs from penicillin (it acts not only on gram-positive, but also on gram-negative microbes), from notatin (active in the absence of glucose) and from patulin (according to the antibacterial spectrum).

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USSR / Microbiology. Antibiosis and Symbiosis. Antibiotics. F

Abs Jour : Ref Zhur - Biologiya, No 5, 1959, No. 19474

The producer was cultured by the surface method in Capec's medium at a temperature of 27°. The antibiotic is separated out by the absorption on carbon and by chromatographic purification in a cylinder containing aluminum oxide. I possesses bactericidal and bacteriostatic action in relation to many gram-positive and gram-negative microbes. It is active in relation to staphylococci by producing 16-40 thousand gram-positive bacilli and by producing typhoid bacilli - 1 : 8000. The pyocyanic bacillus and yeast proved to be immune to I. In the presence of blood serum, the activity of I decreases. The antibiotic is slightly toxic. DL50 for mice in dosage per os consists of 835.7 mg/kg. Local applications

Card 2/3

MEL'NIKOVA, T.A.

Effects of cholinolytics on the reflex regulation of the gastrointestinal canal. Trudy LSGMI 37:15-28 '58.
(MIRA 12:8)

1. Kafedra farmakologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav.kafedroy - deystvitel'nyy chlen AMN SSSR prof. S.V.Anichkov).

(GASTROINTESTINAL SYSTEM, eff. of drugs on adiphenine, anicaine & tetraethylammonium iodide on reflective regulation in dogs (Rus))
(PARASYMPATHOLYTICS, eff. adiphenine & anicaine on reflective regulation of gastrointestinal tract in dogs (Rus))
(TETRAETHYLAMMONIUM, eff. tetraethylammonium iodide on reflective regulation of gastrointestinal tract in dogs (Rus))

MEL'NIKOVA, T.A.; ROZOVA, Ye.S.

Pharmacological characteristics of an extract of the roots and rhizomes of Leuzea cultivated in Leningrad Province. Apt.delo 7 no.2:33-34 Mr-Ap '58. (MIRA 11:4)

1. Iz kafedry tekhnologii galenovykh preparatov (zav.-dots. Yu.K.Sander) i kafedry farmakologii (zav.-doktor med.nauk T.A. Mel'nikova) Leningradskogo khimiko-farmatsevticheskogo instituta.
(LEUZEA)

MEL'NIKOVA, T.A.; ZAPLATINA, O.P.; KOSTYGOV, N.M. (Leningrad)

Effect of certain new cholinolytic substances on the function of the adrenal cortex; clinical and experimental investigations. Probl.endok.i gorm. 5 no.5:14-19 S-O '59. (MIRA 13:5)

1. Iz kafedry farmakologii Leningradskogo khimiko-farmatsevticheskogo instituta (zav. - doktor med.nauk T.A. Mel'nikova) i khirurgicheskogo otdeleniya Oktyabr'skoy zheleznodorozhnoy bol'nitsy (zav. Z.P. Sorokina).

(PARASYMPATHOLYTICS pharmacol.)
(ADRENAL CORTEX pharmacol.)

YEFIMENKO, O.M.; MEL'NIKOVA, T.A.; ZOZULYA, R.N.; KOSTYGOV, N.M.

Polyporenic acid A, an antibiotic from the fungus Polyporus betulinus (Bull) Karst. Antibiotiki 6 no.3:215-220 Mr '61. (MIRA 14:5)

1. Laboratoriya biokhimii nizshikh rasteniy (zav. - prof. P.A. Yakimov) Botanicheskogo instituta AN SSSR i kafedra farmakologii (zav. - prof. T.A.Mel'nikova) Leningradskogo khimiko-farmatsevticheskogo instituta.

(ANTIBIOTICS)

MEL'NIKOVA, T.A.

Androgenic activity of some dicyclopentane derivatives. Trudy Len.khim.-farm.inst. no.13:163-165 '62. (MIRA 15:10)

1. Kafedra farmakologii (zav. prof. T.A.Mel'nikova) Leningradskogo khimiko-farmatsevticheskogo instituta.
(CYCLOPENTANE) (ANDROGENS)

MEL'NIKOVA, T.A.; ZOZULYA, R.N.

Pharmacology of fir balsam. Trudy Len.khim.-farm.inst. no.13:174-179 '62. (MIRA 15:10)

1. Kafedra farmakologii Leningradskogo khimiko-farmatsevticheskogo instituta (zav. prof. T.A.Mel'nikova).
(BALSAMS)

MEL'NIKOVA, T.A.

Pharmacology of anicaine. Trudy Len.khim.-farm.inst. no.13:215-219 '62. (MIRA 15:10)

1. Kafedra farmakologii Leningradskogo khimiko-farmatsevticheskogo instituta (zav. prof. T.A.Mel'nikova).
(PARASYMPATHOLYTICS)

MEL'NIKOVA, T.A.; KOSTYGOV, N.M.

Comparative study of the antipyretic, analgesic, and antiphologistic action of some pyrazolidine derivatives. Trudy Len.khim.-farm.inst. no.13:220-228 '62. (MIRA 15:10)

1. Kafedra farmakologii Leningradskogo khimiko-farmatsevticheskogo instituta (zav. prof. T.A.Mel'nikova).
(PYRAZOLIDINE)

ZOZULYA, R.N.; KUZNETSOVA, G.A.; MEL'NIKOVA, T.A.; YAKIMOV, P.A.

Chemical and pahrmacological study of preparations extracted from Podophyllum Peltatum L. growing in Leningrad Province. Trudy Len.khim.-farm.inst. no.13:245-252 '62. (MIRA 15:10)

1. Kafedra farmakologii (zav. prof. T.A.Mel'nikova) Leningradskogo khimiko-farmatsevticheskogo institua.
(LENINGRAD PROVINCE--PODOPHYLLUM)

SUVOROVSKAYA, N.A., doktor tekhn.nauk; VOSKRESENSKAYA, M.M., kand.tekhn.nauk; MEL'NIKOVA, T.A., inzh.; Prinimal uchastiye TEYKHMAN, N.V., starshiy laborant

Determination of lithium in products containing both lithium and beryllium. Nauch. soob. IGD 16:23-25 '62. (MIRA 16:8)
(Lithium)

MEL'NIKOVA, T. D.

"Development of Isolated Problems in the Agrotechnics of Growing Vegetable Crops by the 'Square Hill' Method." Cand Agr Sci, Moscow Order of Lenin Agricultural Acad imeni K. A. Timiryazev, Moscow, 1954. (KL, No 8, Feb 55)

SO: Sum. No 631, 26 Aug 55-Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)